## *Remarks*

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-4, 7-11, 14-16, 19-23, and 26-29 are pending in the application, with 1, 8, 15, and 20 being the independent claims. Claims 1, 3, 4, 7, 10, 11, 16, and 22 are sought to be amended for clarity. Dependent claims 27-29 are sought to be added. Claims 5-6, 12-13, 17-18 and 24-25 were previously cancelled. These changes are believed to introduce no new matter, and their entry is respectfully requested.

It is requested that this response be entered after a final rejection because the amendments are only made for clarification, and do not substantively change the combinations being claimed. Thus, the same issues are presented for reconsideration, not requiring any further search by the Examiner. Also, the minor changes made herein should place the application in better condition for allowance or appeal.

Based on the above amendments and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.


### *Rejections under 35 U.S.C. § 102*

Claims 1, 4, 8, 11, 15, 19-20, and 23 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Publication No. 2001/0012783 to Peeters *et al.* ("Peeters"). Applicant respectfully traverses this rejection.

Peeters does not teach or suggest all of the features of independent claims 1, 8, 15, and 20. Independent claims 1, 8, 15, and 20 require that the carrier groups are of *dynamically variable size.* This feature is not taught by Peeters. Therefore, Applicant respectfully requests that the rejection be withdrawn.

The Examiner, in response to Applicant's previous arguments, on page 3 of the Office

Action states:

> In paragraph 0023, it states, "the transmitting and computing bits
> and gains information according to the present invention may be
> applied during operation to adapt the carrier constellation
> according to changes of the channel characteristics. The carrier
> constellation as mentioned in paragraph 0005, "this message also
> may contain the description of the carrier subsets". This told us
> that the generation of the constellation (information including the
> description of the carrier subsets, the number of bits to be load in
> each carrier subset and the gain for each of the carrier subset) can
> be performed during the operation to adapt to the changes of the
> channel characteristics, that will include the measure of the signal
> to noise ration for each carrier in order to group the carriers into
> difference carrier subsets. (Office Action Page 3, Lines 1-10).

Peeters discloses that *bits and gains information* is the *constellation information*

(Peeters Para. 0002, Lines 8-12, "… the central office ADSL transceiver produces bits and

gains information, i.e. constellation information…"). Also, Peeters mentions that a

*constellation information message* may contain the description of the carrier subsets, the

parameters, and the interpolation functions (Peeters Para. 0005, Lines 17-19). Therefore,

there is a difference between the *constellation information* and the *constellation information*

*message*, wherein the constellation information message may contain the constellation

information and extra information (like the description of the carrier subsets). Further,

Peeters mentions that *transmitting and computing bits and gains information* may be

applied during operation to adapt the *carrier constellations* according to changes of the

channel characteristics (Peeters Para. 0023). Therefore, the method of Peeters that the

*constellation information* (which is the bits and gains information, and does not include the

description of the carrier subsets) maybe computed and transmitted during the operation to

adapt to changes is not the same as "dynamically variable size carrier group" as recited in

claims 1, 8, 15, and 20 wherein the carrier group size may dynamically change to adapt to

changes.

Dependent claims 4, 11, 19-20, and 23 are not anticipated by Peeters for at least the

same reasons as the independent claims form which they respectively depend, and further in

view of their own respective features.

For at least these reasons, it is respectfully requested that this rejections of claims 1, 4,

8, 11, 15, 19-20, and 23 be withdrawn.


*Rejections under 35 U.S.C. § 103*

### Claims 2-3, 9-10, 16, and 21-22

Claims 2-3, 9-10, 16, and 21-22 were rejected under 35 U.S.C. § 103(a) as allegedly

being unpatentable over Peeters.  Applicant respectfully traverses this rejection.

As noted above, Peeters does not teach or suggest all of the features of independent

claims 1, 8, 15 and 20 from which the rejected claims respectively depend.  Independent

claims 1, 8, 15 and 20 require that the carrier groups are of "dynamically variable size."  This

feature is not taught by Peeters.  Dependent claims 2-3, 9-10, 16, and 21-22 are not

anticipated by Peeters for at least the same reasons as the independent claims form which the

respectively depend, and further in view of their own respective features.

For at least these reasons, it is respectfully requested that this rejections of claims 2-3,

9-10, 16, and 21-22 be withdrawn.

Also, Applicant asserts the dependent claims are patentable over the applied

references for their additional distinguishing features.

For example, the "the at least one carriergroup parameter is a worst case SNR" recited

in claims 3, 10, 16, and 22, using their respective language, is not explicitly or implicitly

taught by the applied reference.  The Examiner on pages 14 and 15 of the Office Action

states:

Peeters further discloses that a bit number at which the carrier with the lowest index in the subset should be transmitted (paragraph 0020, line 6-7)(the examiner interpret that the lowest index in the subset means the carrier with the lowest bit loading number, it is means the carrier with the lowest signal-to-noise ratio, which is the worst case SNR). (Office Action Page 14, Line 19to Page 15, Line 2)

Applicant respectfully disagrees and asserts that the Examiner has mischaracterized Peeters. Peeters on paragraph 0020 discloses that 4096 carriers are a priori grouped into 8 carrier subsets of 512 carriers and for each of the 8 carrier subsets the constellation information producer derives a bit number, a gain at which the carrier with the lowest index in the subset should be transmitted and a gain value at which the carrier with the highest index in the subset should be transmitted (Peeters Para. 0020). For example, if the carrier subset SUBSET1 has the carriers $f_0 \ldots f_{511}$, for this subset a bit number, a gain value for the carrier with the lowest index ($f_0$) and a gain value for the carrier with the highest index ($f_{511}$) are derived. Therefore, the lowest index in the subset **does not** mean the lowest bit loading number (since a bit number is derived for each carrier subset) and is not the same *as the at least one carriergroup parameter is a worst case SNR* recited in claims 3, 10, 16, and 22, using their respective language.

### Claims 7, 14, and 26

Claims 7, 14, and 26 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peeters in view of U.S. Patent No. 7,042,367 to Gardner *et al.* ("Gardner"). Applicant respectfully traverses this rejection.

These dependent claims necessarily include all features of claims 1, 8, and 20, respectively. As discussed above, Peeters fails to disclose all features of claims 1, 8, and 20, and further Gardner fails to cure the deficiencies of Peeters as noted above. Gardner does not teach what is missing from Peeters, for example dynamically variable size carrier group

which is disclosed in claims 1, 8, and 20.  Therefore, claims 7, 14, and 26 are patentable over

Peeters and Gardner taken alone or in combination for at lease the reasons provided above.

### New Claims 27-29

New dependent claims 27-29 are sought to be added.  These claims depend from

independent claim 1, 8, and 20, respectively, and should be found allowable for the reasons

discussed above.  Support for dependent claims 27-29 could be found throughout the

Specification, for example, paragraphs 0034 and 0041 of the instant application.

## *Conclusion*

All of the stated grounds of objection and rejection have been properly traversed,

accommodated, or rendered moot. Applicant therefore respectfully requests that the

Examiner reconsider all presently outstanding objections and rejections and that they be

withdrawn. Applicant believes that a full and complete reply has been made to the

outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite

prosecution of this application, the Examiner is invited to telephone the undersigned at the

number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully

requested.

Respectfully submitted,

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